NASA Facts

National Aeronautics and
Space Administration

Marshall Space Flight Center
Huntsville, Alabama 35812

Promoting Sensorimotor Response Generalizability:

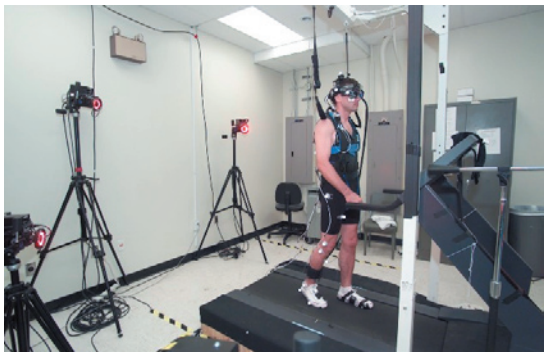
A Countermeasure to Mitigate Locomotor Dysfunction After Long-duration Spaceflight (MOBILITY)and Operations

Experiment Name: Promoting Sensorimotor Response Generalizability: A Countermeasure to Mitigate Locomotor Dysfunction After Long-duration Spaceflight (MOBILITY)
ISS Mission: Expedition Seven through current missions
Payload Location: Performed on the ground before and after flight
Principal Investigator: Dr. Jacob Bloomberg, Johnson Space Center, Houston, Texas

Overview

Astronauts returning from space flight can experience difficulty walking, as the brain must re-adapt to programming body movements in a gravity environment. The Promoting Sensorimotor Response Generalizability: A Countermeasure to Mitigate Locomotor Dysfunction After Long-duration Spaceflight (MOBILITY) experiment will use tests taken before and after a long-duration space flight to determine whether a specific training regimen using the treadmill on the International Space Station can help astronauts recover more quickly when they return to Earth. Specifically, do astronauts who use this unique treadmill workout in space re-adjust more quickly when once again exposed to the effects of gravity?


Functional Mobility Test


Treadmill Locomotion Test

Two tests, the Treadmill Locomotion Test and the Functional Mobility Test, will be performed by each participating crewmember — both before and after their mission (pre- and post-flight). The pre-flight data will be collected on or around six months,

four months and 60 days before launch. Post-flight data will be collected on the day of landing and on post-landing days 1,3,6,12,24 and 48. NASA fuels discoveries that make the world smarter, healthier and safer.

Benefits

How quickly an astronaut's body re-adjusts to gravity after a long-duration space flight is very important — both for Space Station missions and for any future long-duration missions within our own solar system.

Researchers are continuing to search for the best exercise program that will keep astronauts fit while in space and ensure a quick return to their pre-flight physical conditions once they re-encounter the effects of Earth's gravity.

For more information on this experiment and other Space Station investigations, please visit:

http://www.nasa.gov

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